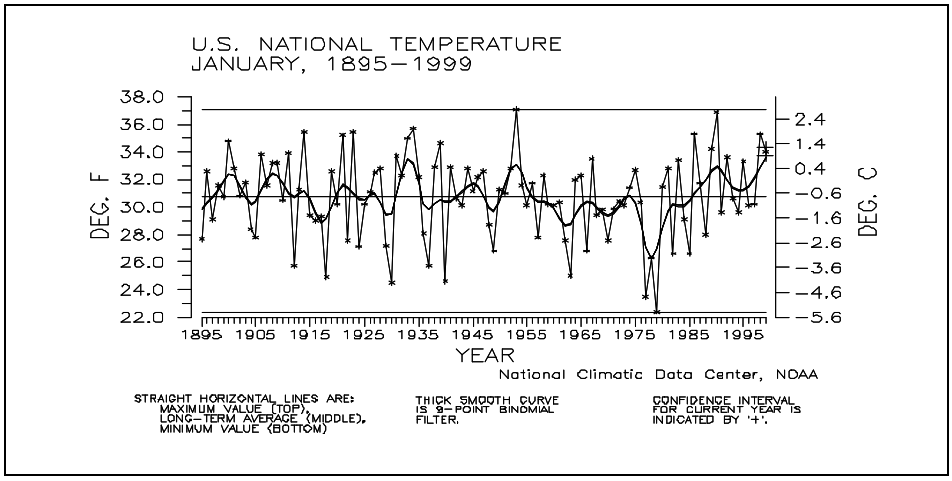
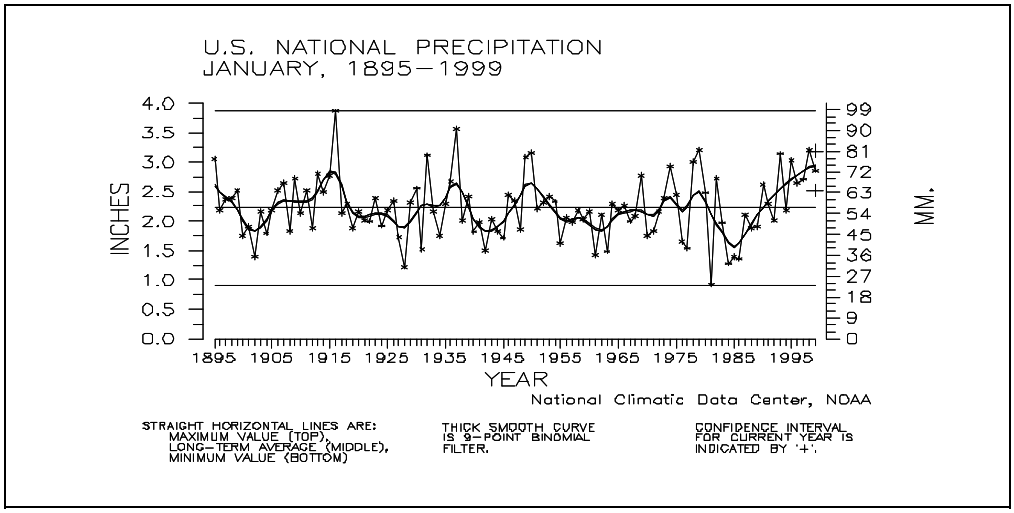
Monthly Activity Report

January 1999





Preliminary data for January 1999 indicate that temperature averaged across the contiguous U.S. was above the long-term mean, ranking as the 13th warmest January since 1895. Nearly 16 percent of the country was much warmer than normal, while about 0 percent of the country was much cooler than normal.

January 1999 was the 13th wettest such month since 1895. Nearly 18 percent of the country was much wetter than normal, while about six percent of the country was much drier than normal.

DIRECTOR'S HIGHLIGHTS

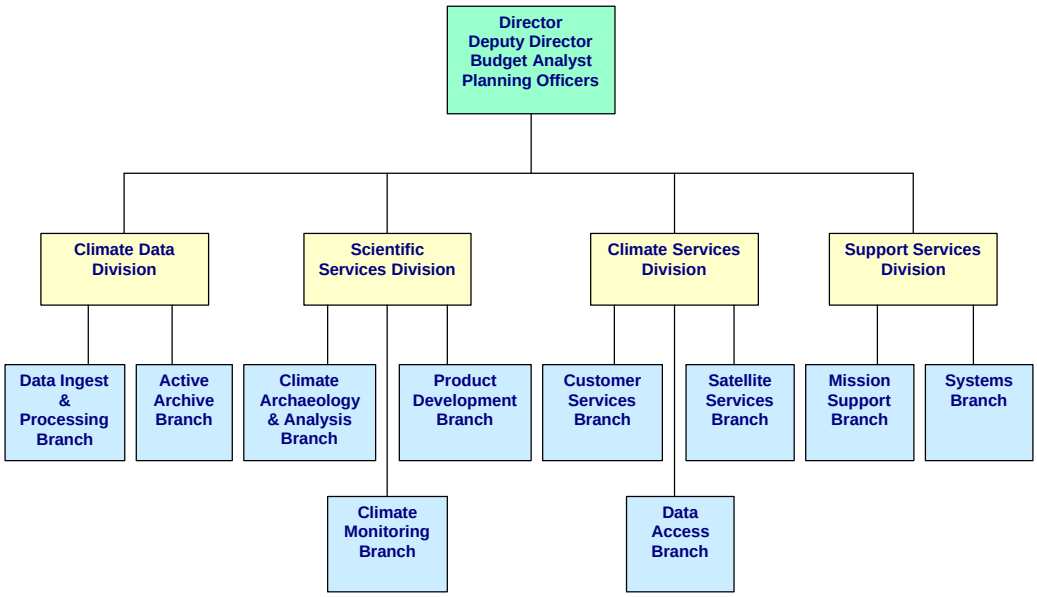
NCDC Participates at the 79th Annual AMS Meeting

Eleven scientists from the National Climatic Data Center (NCDC) attended the annual American Meteorological Society (AMS) meeting in Dallas, TX, January 10-15, 1999. These individuals presented research papers and posters, taught short courses, and chaired sessions at the various conferences and sessions held in conjunction with the annual meeting. NCDC Director Tom Karl was a keynote participant in the National Oceanic and Atmospheric Administration's (NOAA) press conference concerning the Climate of 1998 Annual Review. NCDC also was a major exhibitor at the conference, and was part of the joint NOAA National Data Center's (NNDC) exhibit. Most visitors to the NNDC booth were impressed by the variety and scope of services that each of the three data centers (NCDC, the National Geophysical Data Center, and the National Oceanographic Data Center) provided.

NCDC Reorganization

Mr. Robert Winokur, head of the National Environmental Satellite, Data, and Information Service, approved the National Climatic Data Center (NCDC) reorganization package on January 26, 1999. The package was forwarded to the National Oceanic and Atmospheric Administration's Chief Financial Officer. NCDC has established March 28th, 1999, as the effective data of the new organization. (See new organization chart below)

National Climatic Data Center



CLIMATE DATA AND INFORMATION SERVICES

✦ Data and Information Distribution

January Illustrates Shift To On-line Service

January 1999 customer service statistics reveal electronic mail and telephone contacts experienced a 26 percent and 7 percent increase respectively over December 1998 totals Electronic mail receipts had a 51 percent increase over January 1998 figures, dramatically illustrating the shift in customer preference for electronic mail. Demand for National Climatic Data Center (NCDC) data sets on the Internet continued to show substantial growth during January 1999. A total of 29,000 customers accessed 33 gigabytes of climate data from the NCDC On-Line Data Store during January 1999, which represents a 34 percent increase over January 1998 customer on-line contacts. The shift from off-line data requests to on-line data access has become an established trend.

NCDCs Plan for Off-line Digital Orders

The National Climatic Data Center (NCDC) has developed a final implementation plan to meet the March 1999 deadline for the Unysis migration effort. By April 1, six data sets and associated applications will be serviced from an Oracle relational database system with a Web-based interface to fill orders (e.g., for tape, diskette, etc.). These include the key daily and monthly data sets along with hourly and 15-minute precipitation. Seven data sets and associated applications will be serviced from the Hierarchical Data Storage System (HDSS) using a similar Web interface, but with fewer capabilities for data selection and parsing. These include U.S. and global hourly data sets, marine data sets, and upper-air data. The Oracle/Web system will also be implemented on-line so that most users will be able to order, pay for, and receive data quickly without intervention by NCDC.

Global Climate Normals CD-ROM Available

The new Global Climate Normals CD-ROM is now available. The CD contains 1961-1990 global standard climate normals for over 4,000 stations worldwide, along with information about how the normals were computed for some of the different countries. Normals were computed for many more additional weather elements than are computed for U.S. stations, including snowfall normals. A subset of the information on the CD has been published by the World Meteorological Organization (WMO) as the publication "Climatological Normals (CLINO) for the Period 1961-1990, WMO- No. 847." A Web page containing information about the CD and ordering information for the hard copy publication was prepared and placed online.

NCDC Updates Products and Services Guide

The National Climatic Data Center (NCDC) has completed its annual update to the NCDC Products and Services Guide. The guide now includes 132 pages of information describing NCDC on-line systems, CD-ROM products, specialized products, digital data sets, and publications. Two hundred copies of the guide were distributed at the American Meteorological Society Conference held in Dallas, TX, in January, and it is also available on-line free of charge and via mail when requested.

Data Provided for Freezing Rain Studies

A system was developed to provide, via ftp, all Automated Surface Observation System (ASOS) 1-minute data from eight stations to the Cold Regions Research and Engineering Laboratory (CRREL), in cooperation with the American Society of Civil Engineers (ASCE) ice/snow loads committee. The 1-minute data during freezing rain events will be correlated with a manual (weighing) ice device and the ASOS Rosemount ice sensor. This has been successful during the past two winter seasons, and is being used to develop equations to estimate ice thickness based solely on the ASOS equipment. As a result, plans are underway with the Federal Aviation Administration (FAA) and National Weather Service to add a new METAR remark (during freezing rain) to show ice thickness and severity. The FAA and other users of real-time data (e.g., utilities) are quite interested in this development. CRREL hopes to expand the study into the North Carolina/Virginia Piedmont ice-prone region, but have not yet been successful in setting up the needed equipment in this area.

NCDC Updates Report on Billion Dollar Weather Disasters of 1980-1998

The National Climatic Data Center (NCDC) updated its printed report on U.S. billion dollar weather-related disasters of 1980-1998 in time to be distributed at the American Meteorological Society (AMS) Conference held in Dallas, TX. Four of these events occurred in a very active 1998, and two additional events are currently under investigation for possible inclusion. Overall, the report now includes 37 events for the 19-year period, and the on-line version links to detailed reports about many of these events. Many external Web sites, such as news media outlets, universities, and other government agencies, have direct links to this report. Information/input sources include the National Weather Service, the Federal Emergency Management Agency, Regional Climate Centers, State Climatologists, and state emergency management agencies.

NOAA-K/L/M Level 1b Data Format

The National Climatic Data Center (NCDC) continues to provide support for the development and maintenance of the Level 1b data formats for the NOAA-K/L/M series of Polar-orbiting Operational Environmental Satellites (POES). A previously reported problem in the High Resolution Picture Transmission Minor Frame Telemetry in some Level 1b formats has been confirmed by a user and forwarded to the National Environmental Satellite, Data, and Information Service (NESDIS) software developers for correction. A change to integer scaling factors to improve product quality has been forwarded for approval by the NESDIS/National Weather Service Product Oversight Panels. This change will require advance notice to all data users. Additional changes are being discussed to correct bias errors in the Advanced Microwave Sounding Unit B data. NCDC-Suitland is working with the instrument scientists and software developers to document these data format changes.

Potential Prototype Development for Electronic Receipt of WSR-88D Level II Data

The National Climatic Data Center (NCDC) has begun initial discussions with the University of Oklahoma (UO) concerning a prototype system to electronically transfer and archive WSR-88D Level II data. Dr. Kelvin Droegemeir, Director of the Center for Analysis and Prediction of Storms (CAPS) at UO, is leading a program to ingest and display WSR-88D data in real time from 8 Central U.S. radar sites. The Level II data are compressed at the radar site and transmitted over standard 56K phone lines to a central facility managed by the state of Oklahoma. Dr. Droegemeir is interested in assisting NCDC in development of a prototype ingest system to receive these data from the central facility. If the prototype is developed and proves to be an efficient data transfer method for WSR-88D data, a fully operational system may be implemented to replace the 8mm tape transfer procedure.

Rescuing Historical Data, the Scanning Continues

The conversion of paper records containing surface weather observations to digital images continues at full production. However, big changes are now in the planning stages. Instead of the paper records being returned to NCDC, plans are being made for the records to remain in storage at the contractor's site in West Virginia. In addition, new guidelines for quality assurance for the digital images are being developed, transferring much of the burden of proof back to the contractor. To reflect these changes, a new Statement of Work was developed for Orkand.

Climate Research Center Praises NCDC's Cyclone CD

The Director of the Vietnam Climate Research Center, Tran Viet Lien, has indicated that the National Climatic Data Center's (NCDC) Tropical Cyclone Data CD, provided to him at the Asia-Pacific Network meeting, was very helpful for the studies they are now conducting.

✦ Research Customer Service Group Requests

Major Publishing Company Seeks NOAA Satellite/Radar Images

A well-known school text publishing company is planning on publishing a series of high school textbooks related to severe weather occurrences along the U.S. East Coast. The publishing company is particularly interested in North Carolina, which is prone to hurricane strikes. One of the photograph researchers for the company has chosen a number of excellent satellite and Next Generation Weather Radar (NEXRAD) radar images from the National Climatic Data Center's (NCDC) "Images/Movies of Hurricanes and other Events" Web site, one of the most visited Web pages under the NCDC domain.

Popular NCDC WWW Site Used for Medical Research

A researcher with the World Health Organization (WHO) is using the popular National Climatic Data Center CLIMVIS system to obtain daily and monthly temperature and precipitation data for the Tai National Park in Cote d'Ivoire, Makoukou in Gabon, and Kikwit in Zaire, for the time period 1981 -1998. As part of a WHO project, the researcher is trying to establish a correlation between the available observed climatological data elements in the West African region with occurrences of Ebola hemorrhagic fever outbreaks beginning with 1991.

✦ Satellite Data Requests

Satellite Images Provided to Defense Team

The National Climatic Data Center furnished satellite images to the defense team of the Marine Corps fliers charged with severing a cable while flying under a sightseeing gondola in Italy. Several deaths resulted when the unsupported gondola plunged down the mountain.

Satellite Image Provided for Commerce People Magazine

The November/December 1998 edition of *Commerce People*, a publication produced by the U.S. Department of Commerce, features a story on the National Oceanic and Atmospheric Administration's (NOAA) Hurricane Hunter Planes. NOAA owns three "hurricane hunter" aircraft, each outfitted with sophisticated instruments designed to collect atmospheric data to help forecasters track and predict intensity changes of hurricanes more accurately. During Hurricanes Bonnie and Georges, all three planes simultaneously flew into the storms to take thousands of measurements, which were then fed into some of the computer models at the National Hurricane Center in Miami, FL. The back cover of the publication shows a GOES-8 satellite image

of Hurricane Georges just before making final landfall near Biloxi, MS. The image was supplied as a courtesy by the National Climatic Data Center.

Satellite Images Provided for Meteorology Textbook

The sixth edition of the *Meteorology Today* textbook will be published shortly. The author, Donald Ahrens, contacted the National Climatic Data Center (NCDC) for assistance in selecting satellite imagery that exemplifies the many uses of the National Oceanic and Atmospheric Administration's polar-orbiting and geostationary operational satellites. The textbook is popular among students taking introductory science courses in colleges around the country.

✦ Congressional Requests

Library of Congress Supplied Panamanian Data

On January 22, the Congressional Research Service of the Library of Congress was faxed copies of six climatological summaries printed using data from the International Station Meteorological Climate Summary Version 4.0. The data was requested for a Congressional delegation needing average monthly precipitation data for all available Panamanian stations on the CD-ROM.

✦ Requests from News Media

NCDC Media Interviews

The National Climatic Data Center's (NCDC) principle scientist, David Easterling, conducted two recent media interviews; one with National Public Radio, which aired January 8th, on maximum/minimum temperature trends and the possible impacts. The second was with the Chronicle of Higher Education on Climate Change.

Chicago Snowfall Interests Oprah

Mr. Jim Brady of the Oprah Winfrey Show was faxed copies of the U.S. Observed Snow Cover chart for January 1, 3, 10, 17, and 21, 1999, to help him in an analysis of the total extent of snow cover and maximum depths in the U.S. during the month of January. Interest in the subject was generated by the heavy snowfall early in the month. The official three-day, storm-total snowfall for Chicago O'Hare Airport for January 1-3, 1999, was 21.6 inches, making it the second highest storm total in its history. In addition, Chicago had recorded 29.3 inches for the month of January (as of January 21), making it the fourth snowiest January on record. On Monday, January 25, the Oprah Winfrey Show planned to air a feature about the extraordinary snowfall in January in the Midwest.

✦ Regional Climate Centers

RCC Activities

Work continues on several fronts concerning the Regional Climate Center (RCC) Program. It is time to renew their grants for FY 99, and the RCC Directors are drafting a new proposal. The National Climatic Data Center is working with the RCCs to insure that proposed work is in line with current climate service goals and needs. Implementation of the Customer Services Plan, the changing relationships with the State Climatologists, and making progress towards meeting RCC program requirements (as detailed

SCIENTIFIC AND PROFESSIONAL ACTIVITIES

✦ Climate and Global Change

Global Climate Monitoring Participation

As part of efforts of the Global Climate Monitoring committee, Tom Ross of the National Climatic Data Center worked extensively on producing the 1998 Annual Report. Tom was responsible for the graphics in the on-line version of the report, and was also responsible for the extremes section of the report that appears in the WWW version. Tom plans to continue to broaden this effort in 1999 to include a monthly "Climate Watch" page.

✦ Working Groups/Committees/ Meetings

ASHRAE Winter Meeting

Marc Plantico of the National Climatic Data Center (NCDC) attended the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) meeting in Chicago, IL, January 24-27, 1999. This meeting focused on the development of the 1999-2000 Weather Committee research plan and proposed changes for the Weather Chapter in the 2001 Handbook of Fundamentals. The committee's top rated research project for the next year is entitled "Identify and Quantify Sources of Uncertainty in the Calculation of ASHRAE Design Weather Information." The objective of this project is to establish standard criteria for data completeness, length of data, and distribution of missing data for data used for computing ASHRAE design conditions. The committee also wants to investigate the impact that the automated Automated Surface Observing System (ASOS) observations will have on the design conditions. Marc is a member of the project monitoring subcommittee for the project to develop Typical Weather Years for International Locations, and NCDC will provide ASHRAE with hourly data (including supplementary cloud information) for 200 international locations for the period 1982-1993.

State Climatologist Program Review

It has been 25 years since the demise of the Federally sponsored State Climatologist Program. Over the intervening years, a loose confederation of state sponsored State Climatologists, coordinated by the National Climatic Data Center (NCDC), has evolved. In order to review the entire program at this stage of its development, NCDC sponsored a small workshop drawing together several principle leaders. Preliminary thoughts are to re-certify all State Climatologists, hopefully adding new ones as required, under new Terms of Reference. New relationships between NCDC, the Regional Climate Centers, the National Weather Service, and the American Association of State Climatologists (AASC) will need to be established as well. A report will be issued in February. Participants at the workshop included Steve Doty and John Hughes of NCDC; Dick Reinhardt, Director, Western Regional Climate Center; George Taylor, State Climatologist for Oregon; President of the AASC, Mary Knapp, State Climatologist for Kansas; President-Elect of the AASC; Ken Kunkel, Illinois State Survey; and Lesley-Ann Dupigny-Giroux, State Climatologist for Vermont.

✦ Visitors

AVHRR Data Discussed

Dr. Steve Williams, a researcher for University Corporation for Atmospheric Research in Boulder, CO, met with a National Climatic Data Center representative January 8th to discuss accessing near-real-time AVHRR data over the Indian Ocean. The data will be used in conjunction with other data that will be collected during the Indian Ocean Experiment in 1999. The major goal is to study natural and anthropogenic climate forcing by aerosols and feedbacks on regional and global climate. This issue is at the core of the International Global Change Research Program and has been identified by the International Panel on Climate Changes as a major gap in the science of climate change prediction.

✦ Publications

International Journal Publishes Paper

A paper titled "Using Defense Meteorological Satellite Program-Operational Linescan System (DMSP-OLS) Light Frequency Data to Categorize Urban Environments Associated with U.S. Climate Observing Stations" by T. Owen (NCDC), K. Gallo (ORA), C. Elvidge (NGDC), and K. Baugh (CIRES/Univ. of CO) has been published in the *International Journal of Remote Sensing* (1998, vol. 19:3451-3456). The paper describes a methodology for the use of DMSP-OLS data to categorize the 1,221 U.S. Historical Climatology Network weather stations as urban, suburban, or rural. The categorizations are based on a spatial analysis of the frequence of light observed at night by the DMSP-OLS within the vicinity of each weather station.

Wind Chill Paper Published

“The Steadman Wind Chill: An Improvement Over Present Scales” by Robert Quayle and R.G. Steadman was presented at the American Meteorological Society Annual Meeting in January, and was published in “Weather And Forecasting, 1998,” vol. 13 No. 12(Dec), pp 1187-1193. It could serve as the basis for a completely revised wind chill scale.

✦ Interactions with NOAA Line Offices

NCDC Provides U.S. Hourly Data to NSSL

The National Climatic Data Center (NCDC) is providing all available U.S. hourly surface data (over 1,000 stations) for 1996-1998 to the National Severe Storms Laboratory (NSSL). The data are part of a continuing effort of NSSL to develop severe weather climatologies, and will be used in numerous severe weather studies. The data from the beginning of digital records through 1995 had been previously provided by NCDC, and are being used frequently by NSSL researchers. They have reported excellent success in using the data and are very thankful to NCDC for providing it.

NEXRAD Level II Data Used for Post Storm Event Analysis

Researchers at the Central Pennsylvania National Weather Service Forecast Office and Penn State University are using Next Generation Weather Radar (NEXRAD) Level II radar data for analyses of various severe weather events. These researchers, in conjunction with other researchers at the National Severe Storm Laboratory in Norman, OK, are studying pulse-type storms, derechoes, and supercells that generate severe weather and tornadoes. The teams have put together a number of different case studies available on the WWW at bookend.met.psu.edu/~comet/.

IJPS Ground Segment Project Plan

The National Climatic Data Center (NCDC) reviewed and returned comments on a draft of the National Oceanic and Atmospheric

Administration's Ground Segment Project Plan for Participation in the Initial Joint Polar-Orbiting System (IJPS). This document provides a high-level description of the ground system activities required to support the IJPS, which includes the European MetOp polar orbiting satellites scheduled for launch in 2003. NCDC is included as part of the archive system.

EMPLOYEE ACTIVITIES

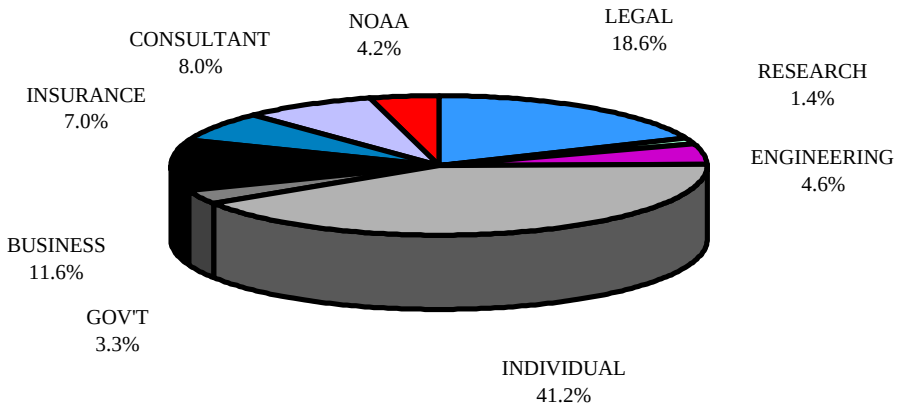
✦ EEO and Community Outreach

Invited Speaker

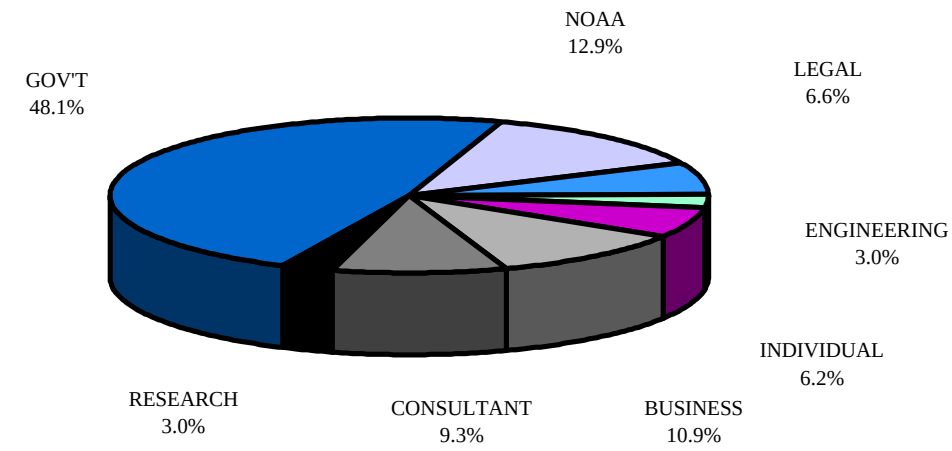
Tom Ross of the National Climatic Data Center (NCDC) was an invited speaker at the Vendors and Publishers Program of the American Association of Librarians International. The program was held on Thursday, January 14, 1999, in Dallas, TX, in conjunction with the American Meteorological Society Conference. Tom gave a presentation on NCDC products and services available on the Web and discussed their usefulness to the group in attendance.

The following charts and graphs show the latest National Climatic Data Center user and data statistics.

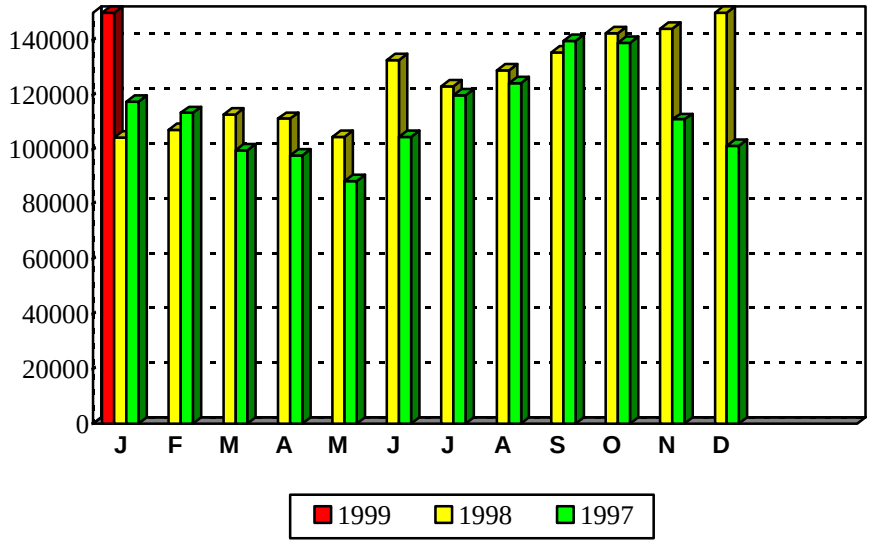
Customer Profile Based on Orders



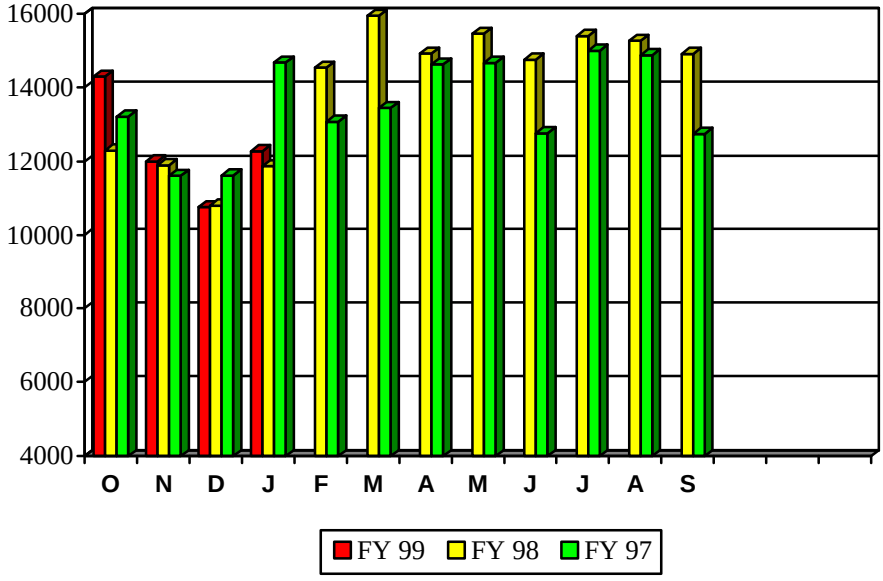
Customer Profile Based on Order Cost

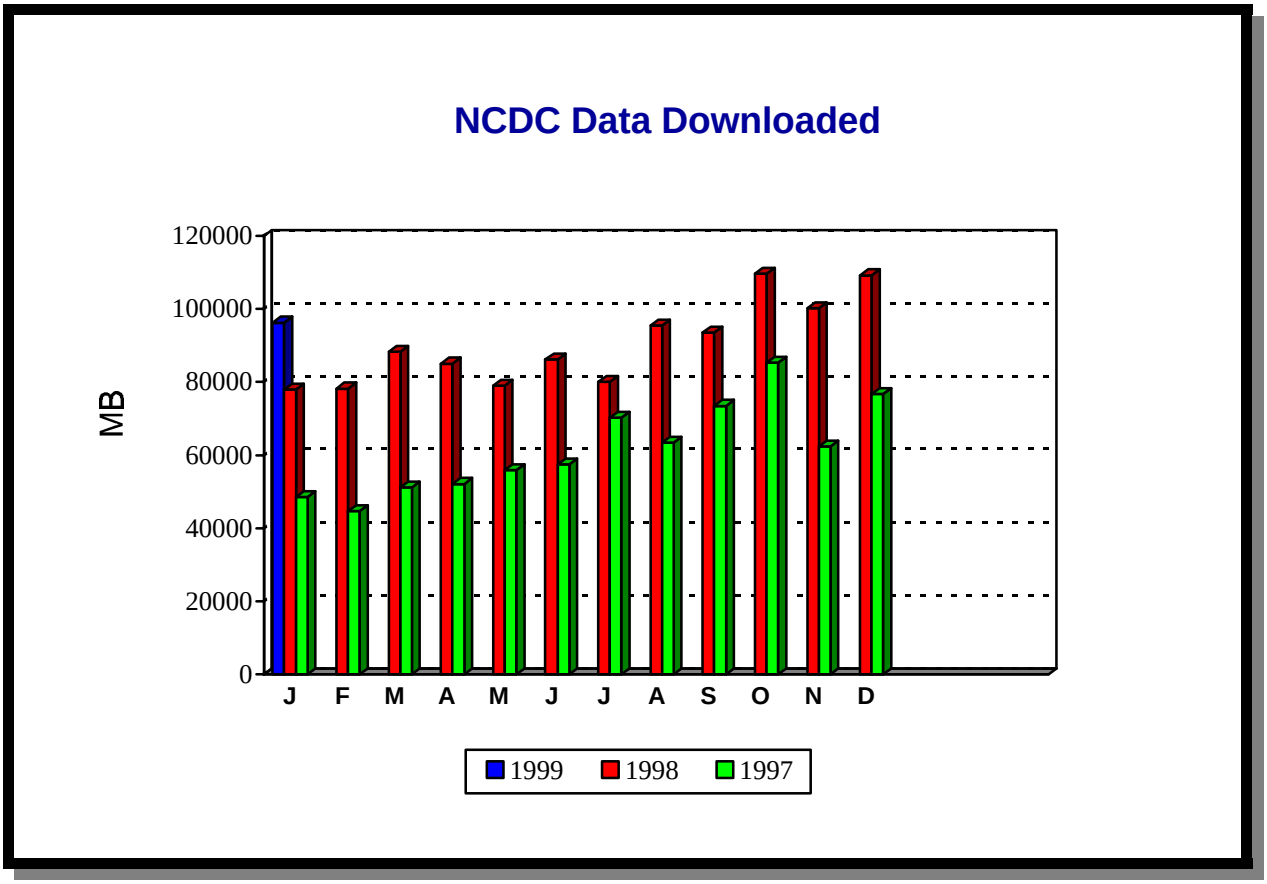


NCDC On-Line Users



NCDC Off-Line Customer Contacts

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